re-run

IFW16

RAW SEQUENCE LISTING DATE: 08/23/2004
PATENT APPLICATION: **US/10/051,902A** TIME: 09:11:44

Input Set : **N:\AMC\US10051902A.raw**
Output Set: **N:\CRF4\08232004\J051902A.raw**

1 <110> APPLICANT: Allen, Stephen M.
2 Hitz, William D.
3 Kinney, Anthony J.
4 <120> TITLE OF INVENTION: Plant Sugar Transport Proteins
5 <130> FILE REFERENCE: BB1163USDIV
--> 6 **<140> CURRENT APPLICATION NUMBER: US/10/051,902A**
7 <141> CURRENT FILING DATE: 2002-01-17
8 <150> PRIOR APPLICATION NUMBER: 60/083,044
9 <151> PRIOR FILING DATE: 1998-04-24
10 <160> NUMBER OF SEQ ID NOS: 30
11 <170> SOFTWARE: Microsoft Office 97
13 <210> SEQ ID NO: 1
14 <211> LENGTH: 2824
15 <212> TYPE: DNA
16 <213> ORGANISM: Zea mays
17 <220> FEATURE:
18 <221> NAME/KEY: unsure
19 <222> LOCATION: (29)
20 <223> OTHER INFORMATION: n = a, c, g or t
21 <220> FEATURE:
22 <221> NAME/KEY: unsure
23 <222> LOCATION: (622)
24 <223> OTHER INFORMATION: n = a, c, g or t
25 <220> FEATURE:
26 <221> NAME/KEY: unsure
27 <222> LOCATION: (636)
28 <223> OTHER INFORMATION: n = a, c, g or t
29 <220> FEATURE:
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31 <222> LOCATION: (638)
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33 <220> FEATURE:
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35 <222> LOCATION: (669)
36 <223> OTHER INFORMATION: n = a, c, g or t
37 <220> FEATURE:
38 <221> NAME/KEY: unsure
39 <222> LOCATION: (771)
40 <223> OTHER INFORMATION: n = a, c, g or t
41 <220> FEATURE:
42 <221> NAME/KEY: unsure
43 <222> LOCATION: (822)
44 <223> OTHER INFORMATION: n = a, c, g or t

p.6

RAW SEQUENCE LISTING DATE: 08/23/2004
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Input Set : **N:\AMC\US10051902A.raw**
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46 <221> NAME/KEY: unsure
47 <222> LOCATION: (856)
48 <223> OTHER INFORMATION: n = a, c, g or t
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51 <222> LOCATION: (889)
52 <223> OTHER INFORMATION: n = a, c, g or t
53 <220> FEATURE:
54 <221> NAME/KEY: unsure
55 <222> LOCATION: (896)
56 <223> OTHER INFORMATION: n = a, c, g or t
57 <220> FEATURE:
58 <221> NAME/KEY: unsure
59 <222> LOCATION: (944)
60 <223> OTHER INFORMATION: n = a, c, g or t
61 <400> SEQUENCE: 1

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63 tccgcacccc tcgctctcca accccaacgc gcggcgttgc taaaattcac ctcagcgcgt 120
64 actccagttt ggccacctca ccacccgccg ccgctgttta agaaggcccc gcgcccgatc 180
65 ggggatcacg aaccttggcc gccgctgccg gagtgggggc gtagatttcc ggcggccatg 240
66 gggggcgccg tgatggtcgc catcgcggcc tctatcggca acttgctgca gggctgggac 300
67 aatgcgacaa ttgctggagc cgtcctgtac ataaagaagg aattcaacct gcagagcgag 360
68 cctctgatcg aaggcctcat cgtcgccatg ttcctcattg gggcaacagt catcacaaca 420
69 tctccggggc caagggctga ctgcgttggt aggaggccca tgctggtcgc ctcggctgtc 480
70 ctctacttcg tcagtgggct ggtgatgctt tgggcgccaa ttgtgtacat cttgctcctc 540
71 gcaaggctca ttgatgggtt cggtatcggt ttggcggtca cacttgttcc tctctacatc 600
72 tccgaaactg caccgcacag anattcttgg ggctgntnga acacgttgcc gcagttcatt 660
73 ggggtcagng gagggatgtt cctctcctac tgcatggtgt ttgggatgtc cctcatgccc 720
74 aaacctgatt ggaggctcat gcttggagtt ctgtcgatcc cgtcacttat ntactttgga 780
75 ctgactgtct tctacttgcc tgaatcacca aggtggcttg tnagcaaagg aaggatggcg 840
76 gaggcgaaga gagtgntgca aaggctgcgg ggaagagaag atgtctcang ggaganggct 900
77 cttctagttg aaggtttggg ggtcggtaaa gatacacgta tttnagagta catcattgga 960
78 cctgccaccg aggcagccga tgatcttgta actgacggtg ataaggaaca aatcacactt 1020
79 tatgggcctg aagaaggcca gtcatggatt gctcgacctt ctaagggacc catcatgctt 1080
80 ggaagtgtgc tttctcttgc atctcgtcat gggagcatgg tgaaccagag tgtacccctt 1140
81 atggatccga ttgtgacact ttttggtagt gtccatgaga atatgcctca agctggagga 1200
82 agtatgagga gcacattgtt tccaaacttt ggaagtatgt tcagtgtcac agatcagcat 1260
83 gccaaaaatg agcagtggga tgaagagaat cttcataggg atgacgagga gtacgcatct 1320
84 gatggtgcag gaggtgacta tgaggacaat ctccatagcc cattgctgtc caggcaggca 1380
85 acaggtgcgg aagggaagga cattgtgcac catggtcacc gtggaagtgc tttgagcatg 1440
86 agaaggcaaa gcctcttagg ggagggtgga gatggtgtga gcagcactga tatcggtggg 1500
87 ggatggcagc ttgcttggaa atggtcagag aaggaaggtg agaatggtag aaaggaaggt 1560
88 ggtttcaaaa gagtctactt gcaccaagag ggagttcctg gctcaagaag gggctcaatt 1620
89 gtttcacttc ccggtggtgg cgatgttctt gagggtagtg agtttgtaca tgctgctgct 1680
90 ttagtaagtc agtcagcact tttctcaaag ggtcttgctg aaccacgcat gtcagatgct 1740
91 gccatggttc acccatctga ggtagctgcc aaaggttcac gttggaaaga tttgtttgaa 1800
92 cctggagtga ggcgtgccct gttagtcggt gttggaattc agatccttca acagtttgct 1860
93 ggaataaacg gtgttctgta ctatacccca caaattcttg agcaagctgg tgtggcagtt 1920

RAW SEQUENCE LISTING DATE: 08/23/2004
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Input Set : **N:\AMC\US10051902A.raw**
Output Set: **N:\CRF4\08232004\J051902A.raw**

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95      accttactaa tgcttccttg cattggcttt gccatgctgc ttatggatct ttccggaaga 2040
96      aggtttttgc tgctaggcac aattccaatc ttgatagcat ctctagttat cctggttgtg 2100
97      tccaatctaa ttgatttggg tacactagcc catgctttgc tctccaccat cagtgttatc 2160
98      gtctacttct gctgcttcgt tatgggattt ggtcccatcc ccaacatttt atgtgcagag 2220
99      atctttccaa ccagggttcg tggcctctgt attgccattt gtgcctttac attctggatc 2280
100      ggagatatca tcgtcaccta cagccttcct gtgatgctga atgctattgg actggcgggt 2340
101      gttttcagca tatatgcagt cgtatgcttg atttcctttg tgttcgtctt ccttaaggtc 2400
102      cctgagacaa aggggatgcc ccttgaggtt attaccgaat tctttgcagt tggtgcgaag 2460
103      caagcggctg caaaagccta atttctttgg taccttttgtg tgcaactatt gcactgtaag 2520
104      ttagaaactt gaaggggttt caccaagaag ctcggagaat tactttggat ttgtgtaaat 2580
105      gttaagggaa cgaacatctg ctcatgctcc tcaaacggta aaaaagagtc cctcaatggc 2640
106      aaataggagt cgttaagttg tcaatgtcat ttaccatatg ttttacctat ttgtactgta 2700
107      ttataagtca agctattcaa cgctggttgt tgctagaaat ctttagaaca aagatgataa 2760
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112 <211> LENGTH: 747
113 <212> TYPE: PRT
114 <213> ORGANISM: Zea mays
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116 <221> NAME/KEY: UNSURE
117 <222> LOCATION: (129)
118 <223> OTHER INFORMATION: Xaa = any amino acid
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122 <223> OTHER INFORMATION: Xaa = any amino acid
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124 <221> NAME/KEY: UNSURE
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126 <223> OTHER INFORMATION: Xaa = any amino acid
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128 <221> NAME/KEY: UNSURE
129 <222> LOCATION: (178)
130 <223> OTHER INFORMATION: Xaa = any amino acid
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133 <222> LOCATION: (207)
134 <223> OTHER INFORMATION: Xaa = any amino acid
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136 <221> NAME/KEY: UNSURE
137 <222> LOCATION: (218)
138 <223> OTHER INFORMATION: Xaa = any amino acid
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141 <222> LOCATION: (220)
142 <223> OTHER INFORMATION: Xaa = any amino acid
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RAW SEQUENCE LISTING DATE: 08/23/2004
PATENT APPLICATION: **US/10/051,902A** TIME: 09:11:44

Input Set : **N:\AMC\US10051902A.raw**
Output Set: **N:\CRF4\08232004\J051902A.raw**

<221> NAME/KEY: UNSURE
<222> LOCATION: (236)
<223> OTHER INFORMATION: Xaa = any amino acid
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1 5 10 15
Leu Gln Gly Trp Asp Asn Ala Thr Ile Ala Gly Ala Val Leu Tyr Ile
20 25 30
Lys Lys Glu Phe Asn Leu Gln Ser Glu Pro Leu Ile Glu Gly Leu Ile
35 40 45
Val Ala Met Phe Leu Ile Gly Ala Thr Val Ile Thr Thr Ser Pro Gly
50 55 60
Pro Arg Ala Asp Cys Val Gly Arg Arg Pro Met Leu Val Ala Ser Ala
65 70 75 80
Val Leu Tyr Phe Val Ser Gly Leu Val Met Leu Trp Ala Pro Ile Val
85 90 95
Tyr Ile Leu Leu Leu Ala Arg Leu Ile Asp Gly Phe Gly Ile Gly Leu
100 105 110
Ala Val Thr Leu Val Pro Leu Tyr Ile Ser Glu Thr Ala Pro His Arg
115 120 125
W--> **Xaa Ser Trp Gly Xaa Xaa Asn Thr Leu Pro Gln Phe Ile Gly Val Xaa**
130 135 140
Gly Gly Met Phe Leu Ser Tyr Cys Met Val Phe Gly Met Ser Leu Met
145 150 155 160
Pro Lys Pro Asp Trp Arg Leu Met Leu Gly Val Leu Ser Ile Pro Ser
165 170 175
Leu Xaa Tyr Phe Gly Leu Thr Val Phe Tyr Leu Pro Glu Ser Pro Arg
180 185 190
Trp Leu Val Ser Lys Gly Arg Met Ala Glu Ala Lys Arg Val Xaa Gln
195 200 205
Arg Leu Arg Gly Arg Glu Asp Val Ser Xaa Glu Xaa Ala Leu Leu Val
210 215 220
Glu Gly Leu Gly Val Gly Lys Asp Thr Arg Ile Xaa Glu Tyr Ile Ile
225 230 235 240
Gly Pro Ala Thr Glu Ala Ala Asp Asp Leu Val Thr Asp Gly Asp Lys
245 250 255
Glu Gln Ile Thr Leu Tyr Gly Pro Glu Glu Gly Gln Ser Trp Ile Ala
260 265 270
Arg Pro Ser Lys Gly Pro Ile Met Leu Gly Ser Val Leu Ser Leu Ala
275 280 285
Ser Arg His Gly Ser Met Val Asn Gln Ser Val Pro Leu Met Asp Pro
290 295 300
Ile Val Thr Leu Phe Gly Ser Val His Glu Asn Met Pro Gln Ala Gly
305 310 315 320
Gly Ser Met Arg Ser Thr Leu Phe Pro Asn Phe Gly Ser Met Phe Ser
325 330 335
Val Thr Asp Gln His Ala Lys Asn Glu Gln Trp Asp Glu Glu Asn Leu
340 345 350
His Arg Asp Asp Glu Glu Tyr Ala Ser Asp Gly Ala Gly Gly Asp Tyr

RAW SEQUENCE LISTING DATE: 08/23/2004
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Input Set : **N:\AMC\US10051902A.raw**
Output Set: **N:\CRF4\08232004\J051902A.raw**

```
193                 355                 360                 365
194 Glu Asp Asn Leu His Ser Pro Leu Leu Ser Arg Gln Ala Thr Gly Ala
195     370                 375                 380
196 Glu Gly Lys Asp Ile Val His His Gly His Arg Gly Ser Ala Leu Ser
197 385                 390                 395                 400
198 Met Arg Arg Gln Ser Leu Leu Gly Glu Gly Gly Asp Gly Val Ser Ser
199                 405                 410                 415
200 Thr Asp Ile Gly Gly Gly Trp Gln Leu Ala Trp Lys Trp Ser Glu Lys
201                 420                 425                 430
202 Glu Gly Glu Asn Gly Arg Lys Glu Gly Gly Phe Lys Arg Val Tyr Leu
203             435                 440                 445
204 His Gln Glu Gly Val Pro Gly Ser Arg Arg Gly Ser Ile Val Ser Leu
205     450                 455                 460
206 Pro Gly Gly Gly Asp Val Leu Glu Gly Ser Glu Phe Val His Ala Ala
207 465                 470                 475                 480
208 Ala Leu Val Ser Gln Ser Ala Leu Phe Ser Lys Gly Leu Ala Glu Pro
209                 485                 490                 495
210 Arg Met Ser Asp Ala Ala Met Val His Pro Ser Glu Val Ala Ala Lys
211                 500                 505                 510
212 Gly Ser Arg Trp Lys Asp Leu Phe Glu Pro Gly Val Arg Arg Ala Leu
213             515                 520                 525
214 Leu Val Gly Val Gly Ile Gln Ile Leu Gln Gln Phe Ala Gly Ile Asn
215     530                 535                 540
216 Gly Val Leu Tyr Tyr Thr Pro Gln Ile Leu Glu Gln Ala Gly Val Ala
217 545                 550                 555                 560
218 Val Ile Leu Ser Lys Phe Gly Leu Ser Ser Ala Ser Ala Ser Ile Leu
219                 565                 570                 575
220 Ile Ser Ser Leu Thr Thr Leu Leu Met Leu Pro Cys Ile Gly Phe Ala
221                 580                 585                 590
222 Met Leu Leu Met Asp Leu Ser Gly Arg Arg Phe Leu Leu Leu Gly Thr
223             595                 600                 605
224 Ile Pro Ile Leu Ile Ala Ser Leu Val Ile Leu Val Val Ser Asn Leu
225     610                 615                 620
226 Ile Asp Leu Gly Thr Leu Ala His Ala Leu Leu Ser Thr Ile Ser Val
227 625                 630                 635                 640
228 Ile Val Tyr Phe Cys Cys Phe Val Met Gly Phe Gly Pro Ile Pro Asn
229                 645                 650                 655
230 Ile Leu Cys Ala Glu Ile Phe Pro Thr Arg Val Arg Gly Leu Cys Ile
231                 660                 665                 670
232 Ala Ile Cys Ala Phe Thr Phe Trp Ile Gly Asp Ile Ile Val Thr Tyr
233             675                 680                 685
234 Ser Leu Pro Val Met Leu Asn Ala Ile Gly Leu Ala Gly Val Phe Ser
235     690                 695                 700
236 Ile Tyr Ala Val Val Cys Leu Ile Ser Phe Val Phe Val Phe Leu Lys
237 705                 710                 715                 720
238 Val Pro Glu Thr Lys Gly Met Pro Leu Glu Val Ile Thr Glu Phe Phe
239                 725                 730                 735
240 Ala Val Gly Ala Lys Gln Ala Ala Ala Lys Ala
241                 740                 745
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RAW SEQUENCE LISTING ERROR SUMMARY DATE: 08/23/2004
PATENT APPLICATION: **US/10/051,902A** TIME: 09:11:45

Input Set : **N:\AMC\US10051902A.raw**
Output Set: **N:\CRF4\08232004\J051902A.raw**

Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; N Pos. 29,622,636,638,669,771,822,856,889,896,944
Seq#:2; Xaa Pos. 129,133,134,144,178,207,218,220,236
Seq#:3; N Pos. 193,388,435,439
Seq#:4; Xaa Pos. 65,130
Seq#:11; N Pos. 421,434,441,458,483,493,498
Seq#:17; N Pos. 149,271,304,334,357,476,599,602
Seq#:18; Xaa Pos. 34,85,98,112,151
Seq#:22; Xaa Pos. 102

VERIFICATION SUMMARY DATE: 08/23/2004
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Input Set : **N:\AMC\US10051902A.raw**
Output Set: **N:\CRF4\08232004\J051902A.raw**

L:6 M:270 C: Current Application Number differs, Wrong Format
L:62 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:0
M:341 Repeated in SeqNo=1
L:164 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:128
M:341 Repeated in SeqNo=2
L:267 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:180
M:341 Repeated in SeqNo=3
L:294 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:64
M:341 Repeated in SeqNo=4
L:642 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:420
M:341 Repeated in SeqNo=11
L:846 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17 after pos.:120
M:341 Repeated in SeqNo=17
L:885 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:18 after pos.:32
M:341 Repeated in SeqNo=18
L:1074 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:22 after pos.:96